

WHAT IS CLAIMED IS:

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1. A wobble signal detection circuit for an optical disk apparatus which detects a wobble signal by focusing a light beam into a spot on a pregroove on an optical disk during recording of data onto and reproduction of data from the optical disk, and includes a photodetector which detects first and second lights from first and second portions of the spot, respectively, and outputs first and second detection signals corresponding to respective power levels of the first and second lights, the first and second portions being formed by splitting the spot into two portions in parallel with a scanning direction, said wobble signal detection circuit comprising:

✓ a sample-and-hold circuit sampling and holding the first and second detection signals output from said photodetector during the recording of the data onto the optical disk;

lowpass filter means for reducing noise components of the respective first and second detection signals, the noise components being generated by sampling the respective first and second detection signals in said sample-and-hold circuit; and ✓

subtraction means for calculating a difference between the first and second detection signals respectively output from said lowpass filter means so as to obtain the wobble signal.

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2. The wobble signal detection circuit as claimed in claim 1, wherein:

said photodetector detects third, fourth, fifth and sixth lights from third, fourth, fifth and sixth portions of the spot, respectively, and outputs third, fourth, fifth and sixth detection signals corresponding to respective power levels of the third, fourth, fifth and sixth detected lights, the third and fourth portions being formed by splitting the first portion into two portions perpendicular to the scanning direction, and the fifth and sixth portions being formed by splitting the second portion into two portions perpendicularly to the scanning direction; and

said sample-and-hold circuit samples and holds the third, fourth, fifth and sixth detection signals output from said photodetector during the recording of the data onto the optical disk,

said wobble signal detection circuit further comprising adding means to which the third, fourth, fifth and sixth detection signals are supplied from said sample-and-hold circuit so that the third and fourth detection signals are added to be supplied to said lowpass filter means, and the fifth and sixth detection signals are added to be supplied to said lowpass filter means.

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3. A wobble signal detection circuit for an optical disk apparatus which detects a wobble signal by focusing a light beam into a spot on a pregroove on an optical disk during recording of data onto and reproduction of data from the optical disk, and includes a

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photodetector which detects first and second lights from first and second portions of the spot, respectively, and outputs first and second detection signals corresponding to respective power levels of the first and second lights, 5 ✓ the first and second portions being formed by splitting the spot into two portions in parallel with a scanning direction, said wobble signal detection circuit comprising:

10 a sample-and-hold circuit sampling and holding the first and second detection signals output from said photodetector during the recording of the data onto the optical disk;

✓ gain adjustment means for adjusting noise levels of noise components included in the respective first and 15 second detection signals to approximately the same level, the noise components being generated by sampling the respective first and second detection signals in said sample-and-hold circuit; and ✓

✓ subtraction means for calculating a difference 20 between the first and second detection signals respectively output from said gain adjustment means.

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4. The wobble signal detection circuit as claimed in claim 3, wherein said gain adjustment means adjusts a gain with respect to each of the first and second detection signals output from said sample-and-hold 30 circuit.

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15 a photodetector which detects first and second lights
from first and second portions of the spot, respectively,
and outputs first and second detection signals
corresponding to respective power levels of the first and
second lights, the first and second portions being formed
by splitting the spot into two portions in parallel with a
20 scanning direction; and

a sample-and-hold circuit sampling and holding the first and second detection signals output from said photodetector during the recording of the data onto the optical disk;

subtraction means for calculating a difference
between the first and second detection signals



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10 said photodetector detects third, fourth, fifth
and sixth lights from third, fourth, fifth and sixth
portions of the spot, respectively, and outputs third,
fourth, fifth and sixth detection signals corresponding to
respective power levels of the third, fourth, fifth and
sixth detected lights, the third and fourth portions being
15 formed by splitting the first portion into two portions
perpendicularly to the scanning direction, and the fifth
and sixth portions being formed by splitting the second
portion into two portions perpendicular to the scanning
direction; and
20 said sample-and-hold circuit samples and holds
the third, fourth, fifth and sixth detection signals
output from said photodetector during the recording of the
data onto the optical disk,
 said wobble signal detection circuit further
25 comprising an adding circuit to which the third, fourth,
fifth and sixth detection signals are supplied from said
sample-and-hold circuit so that the third and fourth
detection signals are added to be supplied to said lowpass
filter means, and the fifth and sixth detection signals
30 are added to be supplied to said lowpass filter means.

8. An optical disk apparatus for recording data onto and reproducing data from an optical disk by detecting a wobble signal by focusing a light beam into a spot on a pregroove on the optical disk, said optical disk apparatus comprising:

a photodetector which detects first and second lights from first and second portions of the spot, respectively, and outputs first and second detection signals corresponding to respective power levels of the first and second lights, the first and second portions being formed by splitting the spot into two portions in parallel with a scanning direction; and

a wobble signal detection circuit,

said wobble signal detection circuit comprising:

a sample-and-hold circuit sampling and holding the first and second detection signals output from said photodetector during the recording of the data onto the optical disk;

gain adjustment means for adjusting noise levels of noise components included in the respective first and second detection signals to approximately the same level, the noise components being generated by sampling the respective first and second detection signals in said sample-and-hold circuit; and

subtraction means for calculating a difference between the first and second detection signals respectively output from said gain adjustment means.

9. The optical disk apparatus as claimed in claim 8, wherein said gain adjustment means adjusts a gain

with respect to each of the first and second detection signals output from said sample-and-hold circuit.

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10. The optical disk apparatus as claimed in claim 8, wherein said gain adjustment means adjusts a gain with respect to one of the first and second detection signals output from said sample-and-hold circuit.

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